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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,805	12/07/2001	Hiromasa Shimizu	HITA.0131	7667
38327	7590	09/09/2004	EXAMINER	
REED SMITH LLP 3110 FAIRVIEW PARK DRIVE, SUITE 1400 FALLS CHURCH, VA 22042			SEFER, AHMED N	
			ART UNIT	PAPER NUMBER
			2826	

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/004,805

Applicant(s)

SHIMIZU ET AL.

Examiner

A. Sefer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 6-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6,8-12 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/2004 and 6/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 17, 2004 has been entered.

Claim Objections

2. Claim 1 is objected to because of the following informalities: Last line, the limitation "ordinarily contacts directly contacts" should read "ordinarily contacts directly." Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 6, 8, 9 and 12, are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugata et al. ("Sugata") USPN 4,568,149 in view of Sato (JP 8-304832).

Sugata discloses (see figs. 2-5 and col. 6, lines 44-68) a liquid crystal display device comprising a first substrate 7 on a main surface thereof, a black mask 12 and color filters 14, each arranged in an aperture of the black mask, being formed; a liquid crystal layer 11; a second

substrate S disposed opposite to the first substrate across the liquid crystal layer and stuck to the first substrate by a sealing material 10 applied to the peripheries of a main surface of the first substrate facing the liquid crystal layer and of a main surface of the second substrate facing the liquid crystal; a stacked structure formed on the main surface of the second substrate by stacking in order first signal lines 3, an insulating film 5 covering the first signal lines, and second signal lines 1 each overlappingly intersecting the first signal lines over the insulating film therebetween; first spacers and second spacers 6a-6c both formed on the main surfaces of the first substrate and arranged on the black mask and in the liquid crystal layer, wherein, each of first spacers ordinarily contacting directly with the stacked structure formed on the second substrate, but does not disclose each of second spacers ordinarily spaced from the stacked structure formed on the second substrate.

Sato disclose in fig. 2 a liquid crystal display device comprising first and second substrate and first and second spacers 4/5, wherein each of the second spacers 4 is spaced from the structure formed on the second substrate 2 to accommodate (See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963)) the liquid crystal therebetween.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Sato's teachings with Sugata's device since that would prevent generation of air bubbles in the liquid crystal as taught by Sato.

As for claim 6, Sato disclose each of the second spacers contacts with the stacked structure formed on the second substrate while the first spacers be subjected to an external force.

As for claim 8, Sugata discloses each of first spacers contacting with the stacked structure at an overlappingly intersecting position of one of the first signal lines and each of the second

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spacers contacting with another part of the stacked structure which includes one of first signal lines but excludes any one of the second signal lines.

As for claim 9, Sugata discloses (see col. 5, lines 1-5) a black mask and color filters covered by a protective film (not shown) and the first spacers and the second spacers are formed on top of the protective film.

As for claim 12, Sugata discloses a second substrate having a plurality of pixels arranged on the main surface thereof, and each of the pixels has a switching element controlled by one of the first signal lines and a pixel electrode receiving a signal from one of the second signal lines through the switching element.

5. Claims 1, 6 and 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagawa et al. ("Yanagawa") (JP 2000-227596) in view of Sato.

Yanagawa discloses in figs. 1 and 8-10 liquid crystal display device comprising a first substrate 1B on a main surface thereof, a black mask BM and color filters 9, each arranged in an aperture of the black mask, being formed; a liquid crystal layer; a second substrate 1A disposed opposite to the first substrate across the liquid crystal layer and stuck to the first substrate by a sealing material 24 applied to the peripheries of a main surface of the first substrate facing the liquid crystal layer and of a main surface of the second substrate facing the liquid crystal; a stacked structure formed on the main surface of the second substrate by stacking in order first signal lines 2, an insulating film (unnumbered) covering the first signal lines, and second signal lines 3 each overlappingly intersecting the first signal lines over the insulating film therebetween; first spacers 10B and second spacers 10A both formed on the main surfaces of the first substrate and arranged on the black mask and in the liquid crystal layer, wherein, each of

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first spacers ordinarily contacting directly with the stacked structure formed on the second substrate, but does not disclose each of second spacers ordinarily spaced from the stacked structure formed on the second substrate.

Sato disclose in fig. 2 a liquid crystal display device comprising first and second substrate and first and second spacers 4/5, wherein each of the second spacers 4 is spaced from the structure formed on the second substrate 2 to accommodate (See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963)) the liquid crystal therebetween.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Sato's teachings with Yanagawa's device since that would prevent generation of air bubbles in the liquid crystal as taught by Sato.

As for claim 6, Sato disclose each of the second spacers contacts with the stacked structure formed on the second substrate while the first spacers be subjected to an external force.

As for claim 8, Yanagawa discloses each of first spacers contacting with the stacked structure at an overlappingly intersecting position of one of the first signal lines and each of the second spacers contacting with another part of the stacked structure which includes one of first signal lines but excludes any one of the second signal lines.

As for claim 9, Yanagawa discloses a black mask and color filters covered by a protective film 8 and the first spacers and the second spacers are formed on top of the protective film.

As for claim 12, Yanagawa discloses a second substrate having a plurality of pixels arranged on the main surface thereof, and each of the pixels has a switching element controlled

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by one of the first signal lines and a pixel electrode 5 receiving a signal from one of the second signal lines through the switching element.

As for claim 10, Yanagawa discloses (figs. 1 and 8 and 9) each of first spacers 10B is formed on top of a base pattern (unnumbered) formed on area of black mask 9, while the base pattern is not formed on area of the black mask where the second spacers 10A are formed.

As for claim 11, Yanagawa discloses (figs. 1 and 8 and 9) a protective film 8 covering the black mask, the color filters, and the base patterns such that the first spacers 10B are formed on areas of the protective film while the second spacers 10A are formed on other areas of the protective film covering the black mask but not the base patterns.

Allowable Subject Matter

6. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (571) 272-1921.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ANS

September 1, 2004



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